

taneous messages. But when one or both messages are drawn from a large number of possibilities, "a selective filter in the brain" lets only one message come through.

How does this filter work? Broadbent¹ has recently described some of the experiments with speech sounds that have provided a tentative answer to this question. Speech sounds can be characterized by the rate of pulsation (or modulation) from the voice and the specific frequencies emitted by the mouth. Using appropriate apparatus, it was found, for example, that two pulsation rates, combined with the same filter frequency and fed into each ear separately, were heard as two distinct vowel sounds by the listener, whereas with different filter frequencies but the same rate of pulsation the listener reported that he heard but one vowel sound. From such investigations it was concluded that a man can listen to one message and ignore another primarily by selecting from the mass of sounds entering his ears all those frequencies that are being modulated at the same rate.

In some instances, however, attention to the *content* of the speech takes precedence over attention to its physical characteristics. A person fully occupied in listening to speech entering one ear will hear his own name in the other ear even though he remains quite unresponsive to any other word directed to that ear. Also, speech entering the "rejecting" ear can break through to the subject's attention if it consists of words that would probably follow the words that have just been heard by the ear that is receiving the message. This phenomenon has yet to be explained.

The study of this subject of attention is fraught with logical and semantic difficulties. For example, the phrase "attending to something" is used to mean "concentrating one's awareness on", "selecting from" and "expecting", three quite different activities no matter what they have in common. Unless the particular meaning attached to the word "attention" is made clear, no useful comparison will be possible between results of experiments.

To the consternation of some psychologists, attention, in any of the senses in which it is used, may be active or passive. Teachers are only too aware of this difference. Language also makes a distinction: "to hear" means to perceive with the ear, while "to listen" means to make an effort to hear something ("Can you hear me at the back?" "Listen closely").

Further, there are different levels of attention. Using the example of hearing speech, attention can be directed at the level of hearing (or listening for) merely the verbal noises. Attention can be directed to hearing (or listening to) the statements made: to be enabled to repeat them. At a higher level still, attention can be directed towards understanding the simple meaning of the statements.

Some such considerations of logic and semantics will have to play a part in the design and reporting of future work to prevent woolly thinking in this difficult field.

REFERENCES

1. BROADBENT, D. E.: *Scientific American*, 206: 143, 1962.

R. ALTA.

THE interest of the Government of Alberta in pharmacy, pharmacology, generic names, drug prices and other aspects of medication has been evident for some time. This interest has found expression in a recent amendment to the Alberta Pharmaceutical Association Act which permits pharmacists to substitute the generic equivalents of drugs prescribed by a doctor. The operative portion of the legislation is phrased as follows:

"45. Where a prescription refers to a drug or drug combination by a brand name or a name other than its generic name, a pharmaceutical chemist, in dispensing the prescription, may use a drug or drug combination that is the generic equivalent of that named in the prescription unless the prescriber indicates otherwise,

- (a) by designating the name of the manufacturer, or
- (b) by specifying that no equivalent is to be dispensed."

The amendment raises several interesting questions. Does it infringe on the age-old assumption of prescribers that their order "Take thou" expressed in the second person singular, imperative mood, of the Latin word *Recipe* is a literal instruction to dispense the medicine ordered and nothing else?

Are the generically named drugs of an unknown manufacturer actually the pharmaceutical equivalents of named preparations? Are the patient's and the doctor's interests adequately protected by the discretionary powers conferred on the pharmacist? Is the patient likely to be provided with drugs at lower cost? Will the doctors make extensive use of the no-substitution clause? Will pharmacists assume the responsibility in substituting equivalents?

At present no authoritative answers are available, but all concerned will observe the developments in Alberta with a great deal of interest.

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